

A B S T R A C T

A METHOD AND APPARATUS FOR ETCHING A SUBSTRATE WITH A
VERY HIGH POWER INDUCTIVELY-COUPLED PLASMA

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According to the invention, etching is performed in
a reaction chamber (1) by subjecting a substrate (16)
biased by a bias generator (15) to a plasma generated by
a plasma source (4) contained in a leakproof wall (5) of
10 dielectric material surrounded by an inductive coupled
antenna (6) powered by a radiofrequency generator (7).
Control means (13) control solenoid valves (12a, 12b,
12c) and the radiofrequency generator (7) so as to
produce a prior step of establishing the plasma
15 excitation power progressively, during which step an
inert gas such as argon or nitrogen is injected into the
reaction chamber (1), and the power delivered by the
radiofrequency generator (7) is raised progressively
until it reaches a nominal power. This avoids applying
20 thermal shock to the leakproof wall (5) of dielectric
material that might otherwise destroy the wall, thus
making it possible to plasma excitation powers that are
greater than 3000 W.

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Translation of the title and the abstract as they were when originally filed by the
35 Applicant. No account has been taken of any changes that may have been made
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